

IN THE CLAIMS:

Please amend claims 1-3 as shown below, in which insertions are indicated by underline and deletions are indicated with strikethrough or by double brackets. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) An automatic parking brake system, comprising:

a casing;

a parking piston ~~(23, 103)~~ which is slidably fitted into the ~~[[a]]~~ casing ~~(22, 102)~~ ~~[[and]]~~ ,
wherein the casing has a parking control fluid pressure chamber ~~(28, 106)~~ defined therein
between a rear face of the parking piston ~~(23, 103)~~ and the casing ~~(22, 102)~~ so that a parking
brake state can be obtained by forward movement in response to a parking control fluid pressure
acting on the parking control fluid pressure chamber ~~(28, 106)~~;

a lock mechanism ~~(25, 105)~~ having a lock piston ~~(24, 104)~~ which is slidably fitted into
the casing ~~(22, 102)~~ so as to be capable of advancing or retreating relative to the parking piston
~~(23, 103)~~, wherein said lock mechanism has a parking release control fluid pressure chamber ~~(44,~~
~~109)~~ defined therein between a front face of the lock piston ~~(24, 104)~~ and the casing ~~(22, 102)~~,
and said piston is urged forward by a spring ~~(48, 114)~~; ~~[[,]]~~

and wherein the lock mechanism ~~(25, 105)~~ is configured and arranged to automatically
lock ~~[[ing]]~~ in response to forward movement of the parking piston ~~(23, 103)~~ in order to
mechanically lock the parking piston ~~(23, 103)~~ at a forward position and to unlock ~~[[ing]]~~ in
response to a parking release control fluid pressure acting on the parking release control fluid
pressure chamber ~~(44, 109)~~;

a fluid pressure source ~~(10C; 10A, 10B)~~;

and a fluid pressure control mechanism ~~means~~ ~~(56; 66A, 66B)~~ for controlling a fluid
pressure generated by the fluid pressure source ~~(10C; 10A, 10B)~~ so that the parking control fluid
pressure and the parking release control fluid pressure can be obtained and separately controlled.

2. (Currently Amended) The automatic parking brake system according to Claim 1, wherein:

the lock piston ~~(24, 104)~~ of the lock mechanism ~~(25, 105)~~ is positioned at the rear side of the parking piston ~~(23, 103)~~ so that a forward urging force acts on the lock piston ~~(24, 104)~~ at least when the parking piston ~~(23, 103)~~ moves forward, and is provided so as to allow a parking release control pressure to be made to act on the lock piston ~~(24, 104)~~ toward the rear,

and the lock mechanism ~~(25, 105)~~ further comprises:

a cylindrical retaining tube ~~(51)~~ integrally and coaxially connected to a rear part of the parking piston ~~(23, 103)~~;

a plurality of spheres ~~(52)~~ retained at a plurality of positions in the peripheral direction of the retaining tube ~~(51)~~ so that the spheres ~~(52)~~ can move along the radial direction of the retaining tube ~~(51)~~;

and an insertion shaft ~~(53)~~ inserted into the retaining tube ~~(51)~~ so that the insertion shaft ~~(53)~~ can move axially relative to the retaining tube ~~(51)~~ and connected integrally to the front end of the lock piston ~~(24, 104)~~ so as to be in contact with the spheres ~~(52)~~ from the inside of the retaining tube ~~(51)~~;

wherein the casing has a large diameter hole portion ~~(21e, 101b)~~ having a larger diameter than that of the retaining tube ~~(51)~~ and a small diameter hole portion ~~(21d, 101e)~~ being formed on an inner face thereof ~~of the casing~~ ~~(22, 102)~~ between the parking piston ~~(23, 103)~~ and the lock piston ~~(24, 104)~~ so that a forward-facing annular latching step ~~(21g, 101f)~~ is interposed between the large diameter hole portion ~~(21e, 101b)~~ and the small diameter hole portion ~~(21d, 101e)~~, the small diameter hole portion ~~(21d, 101e)~~ being formed so as to have a smaller diameter than that of the large diameter hole portion ~~(21e, 101b)~~ and be able to be inserted into the retaining tube

(51) and being disposed to the rear of the large diameter hole portion (21e, 101b);

and wherein the insertion shaft (53) ~~is being~~ formed by coaxially and integrally connecting a front small diameter shaft portion (53a) and a rear large diameter shaft portion (53b) via a tapered step (53e) that is capable of changing the position of contact of each of the spheres (52) between the small diameter shaft portion (53a) and the large diameter shaft portion (53b); [[,]]

the small diameter shaft portion (53a) being in contact with each of the spheres (52) so as to be capable of putting each of the spheres (52) in rolling contact with an inner face of the small diameter hole portion (21d, 101e) in a state in which the parking piston (23, 103) is at a retreat limit, and the large diameter shaft portion (53b) being connected coaxially to the small diameter shaft portion (53a) so as to be capable of pushing each of the spheres (52) outward along the radial direction of the retaining tube (51) in order to make the spheres (52) contact the large diameter hole portion (21e, 101b) in response to the parking piston (23, 103) moving forward from the retreat limit and the lock piston (24, 104) moving forward.

3. (Currently Amended) The automatic parking brake system according to either Claim 1 or Claim 2, ~~wherein~~ further comprising a brake caliper having an adjustment mechanism (82) is provided therein, said ~~within~~ a brake caliper (75) having forming a brake fluid pressure chamber (80) formed therein, a brake piston (78) being slidably fitted into a cylinder hole (76) of the brake caliper (75) and having a rear face facing the brake fluid pressure chamber (80),

the adjustment mechanism (82) comprising:

an adjustment nut (83) connected to the brake piston (78) so that relative rotation is not possible and housed in the brake fluid pressure chamber (80), an adjustment bolt (84) having a front end part screwed into the adjustment nut (83), a relay piston (85) disposed in a rear part of

the brake fluid pressure chamber (80) and slidably fitted into the brake caliper (75) in a liquid-tight manner so that the relay piston (85) cannot rotate around the axis but can move in the axial direction, and a small piston (86) integrally and coaxially connected to a rear part of the adjustment bolt (84), slidably fitted into the relay piston (85) in a liquid-tight manner, and resiliently urged in a direction in which the small piston (86) frictionally engages with the relay piston (85), the parking piston (103) abutting against the relay piston (85) from the rear side and being slidably fitted into the casing (102) connected to the brake caliper (75), and the lock mechanism (105) being provided within the casing (102) to the rear side of the parking piston (103).